

CLAIMS

1. A remote monitoring system for exterminating pest, comprising:
at least one sensor, installed at a plurality of zones of a subject site, for
5 sensing movement of the pest in the zones, and producing and transmitting detection
signals corresponding to the sensed movement;
at least one remote controller, installed at the subject site, for receiving said
detection signals and processing and transmitting the received detection signals; and
a central control apparatus for receiving information from said remote
10 controller, analyzing and managing the information by the zones.
2. The system of claim 1, further comprising at least one repeater, installed at
the subject site, for receiving the detection signals and re-transmitting them to the
remote controller.
- 15 3. The system of claim 1, wherein a transmission of the detection signals
between the sensor and the remote controller is performed by wireless
communication.
- 20 4. The system of claim 2, wherein the transmission and the retransmission of
the detection signals among the sensor, the repeater, and the remote controller are
performed by wireless communication.
5. The system of claim 2, wherein the transmission of the detection signals
25 between the sensor and the repeater is performed by wired communication, and the
retransmission of the detection signals between the repeater and the remote controller
is performed by wireless communication.
6. The system of claim 1, wherein the sensor comprises at least one among a
30 first sensor for sensing movement of cockroaches, a second sensor for sensing
movement of rats, and a third sensor for sensing movement of flying insects.
7. The system of claim 1, wherein the sensor is installed together with a pest
control equipment for capturing the pest.
- 35 8. The system of claim 1, wherein the sensor is implemented by one selected

from a group of an insect luring light, an automatic chemical exposure dispenser, and a luring frame for capturing rodents, integrated with a heat detector or a movement detector.

5 9. The system of claim 1, wherein the remote controller further comprises:
a receiving module for receiving the detection signals from the sensor;
a detection information processing module for receiving and processing the
detection signals, and collecting pest-related information; and
a transmitting module for transmitting the processed pest-related information
10 to the central control apparatus.

10. The system of claim 9, wherein the remote controller further comprises a
data input module wherein information related to an origination of the pest is
manually inputted from a user or a pest control service technician of the subject site.

15 11. The system of claim 9, wherein the remote controller further comprises:
a transmission time determining module for determining whether to transmit
the pest-related information immediately or not; and
a memory for temporally storing a process result of the pest-related
20 information for predetermined period until the pest-related information is transmitted,
in case that the transmission time determining module determines not to transmit the
pest-related information immediately.

25 12. The system of claim 1, wherein the central control apparatus further
comprises:
a pest-related information analyzing module for receiving and analyzing, in
each of the zones, the pest-related information transmitted from the remote
controller;
a pest-related information managing module for, in a form of database,
30 storing, updating and managing the pest-related information transmitted from the
remote controller;
a database managed by the pest-related information managing module;
a pest control time determining module for determining whether to perform a
pest control work immediately or not on the basis of the analysis result from the pest-
35 related information analyzing module; and
a communication module for performing wired/wireless communications.

13. The system of claim 12, wherein the central control apparatus further comprises a report producing module for producing a report with respect to the pest-related information.
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14. The system of claim 1, wherein the sensor produces the detection signals in response to sensing of the pest, and the produced detection signals are transmitted together with an identification signal of each sensor.
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15. The system of claim 1, wherein the remote controller transmits the information to the central control apparatus through a public switched telephone network.
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16. The system of claim 12, wherein the central control apparatus further comprises a location searching module for searching a location of a mobile communication terminal belonging to the service technician, and the communication module transmits the analysis result of the pest-related information to the mobile communication terminal searched by the location searching module.
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17. The system of claim 9, wherein the remote controller further comprises:
a pest-related information analyzing module for receiving and analyzing the pest-related information transferred from the detection information processing module;
a pest-related information managing module for storing, updating and
25 managing the result analyzed at the pest-related information analyzing module; and
a terminal connecting module for transmitting the analysis result of the pest-related information from the memory to the mobile communication terminal, when the mobile communication terminal is connected to the terminal connecting module.
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18. The system of claim 16 or 17, wherein the mobile communication terminal is a personal digital assistant (PDA).
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19. The system of claim 12, wherein the pest-related information analyzing module decides grade of each sensor on the basis of population of the detected pest, and the pest control time determining module determines a pest control time of each zone on the basis of each graded sensor.

20. The system of claim 11, wherein the transmission time determining module transmits the pest-related information at a predetermined time when cockroaches or flying insects are detected, and immediately transmits the pest-related information
5 when rats are detected.

21. The system of claim 1, wherein the sensor and the remote controller periodically check a status including a mechanical breakdown and transmit information related to the checked status to the central control apparatus.
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22. A remote monitoring method for exterminating pest, comprising the steps of:
sectioning a subject site into a plurality of zones;
collecting pest-related information by sensing pest in active at each of the sectioned zones;
15 transmitting the collected pest-related information to a central control apparatus;
analyzing the pest-related information transmitted;
updating and storing the analyzed pest-related information by comparing it with pre-stored information in a database; and
20 determining a pest control time on the basis of the analyzed pest-related information.

23. The method of claim 22, further comprising the step of producing a report by using the analyzed pest-related information.
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24. The method of claim 22, wherein the sectioning step sections the subject site into a plurality of physical zones.

25. The method of claim 22, wherein the sectioning step sections zones of the subject site on the basis of a function of each zone.
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26. The method of claim 24 or 25, wherein the sectioning step sections each area of the subject site into a minimum unit by which a pest control is to be performed.

35 27. The method of claim 24, wherein the sectioning step further comprises the steps of:

sectioning the subject site into buildings and their outer blocks; and
sectioning the building into floors.

28. The method of claim 26, further comprising the step of assigning a code to
5 each minimum unit, and
said analyzing of the pest-related information comprises the step of
arranging the pest-related information according to the codes assigned to the plurality
of zones sectioned in the subject site.

10 29. The method of claim 22, wherein the pest-related information is transmitted
at a predetermined time.

30. The method of claim 22, wherein the pest-related information is transmitted
at a predetermined time when cockroaches or flying insects are detected, and
15 immediately transmitted when rats are detected.

31. The method of claim 28 or 29, wherein the predetermined time is nighttime.

32. The method of claim 22, further comprising the step of transmitting the pest-
20 related information to at least one service technician by wireless communication.

33. The method of claim 22, wherein the analyzing of the pest-related
information is a step of obtaining the number of pest appearance and captured pest
according to locations in the subject site, times of a certain day, and categories of
25 pest to be exterminated.

34. The method of claim 22, further comprising the step of transmitting the pest-
related information to a mobile communication terminal belonging to a service
technician.
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35. The method of claim 33, wherein the analyzed pest-related information is
transmitted together with information on a shortest path to the subject site.

36. The method of claim 22, further comprising the steps of:
35 searching for a location of a service technician; and
transmitting the analyzed pest-related information to a mobile

communication terminal of the service technician.

37. The method of claim 22, further comprising the step of transmitting the collected pest-related information to a mobile communication terminal of a service technician.
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